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STATISTICS OF DEATHS: 1905-1906.

Summary.—In the first year covered by the new law requiring the proper registration of deaths prior to the issuance of burial permits, returns from all fifty-seven counties of California give a total of 27,026 deaths, exclusive of stillbirths, 12,385 being for the last half of 1905 and 14,641 for the first half of 1906.

For an estimated State population of 1,784,521 in 1905, the 27,026 deaths in 1905-1906 give a rate of 15.1 per 1,000 population.

The death-rate is 11.5 for Northern California, 15.1 for Central California, and 17.6 for Southern California.

The death-rates are only 12.0 and 11.1, respectively, for the coast and interior counties of Northern California, but the returns were not particularly complete for some counties in this part of the State.

The death-rate is highest, 17.9, for Los Angeles, and next, 17.1, for the other six counties of Southern California, being swollen in each case by the many deaths of recent residents, especially from tuberculosis.

The death-rate is also above the State average for the coast counties of Central California, 16.4, and for San Francisco, 15.6, where fatalities in the April earthquake and fire increased the mortality appreciably.

The rate is below the State average, 15.1, not only for the coast and interior counties of Northern California, but also for the bay counties other than San Francisco (14.5), and for the interior counties from Yolo, Sacramento, and El Dorado to and including Kern (14.4).

The rate is 15.2 for the metropolitan area, against 13.6 for the rural counties north of Tehachapi.

The principal cause of death in California is tuberculosis, which caused 15.5 per cent of the total deaths. The death-rate for tuberculosis of the lungs and other organs is 234.4 per 100,000 population.

Next to tuberculosis come diseases of the circulatory, respiratory, and nervous systems, which caused respectively 12.6, 10.8, and 9.8 per cent of the total deaths. Or, from another point of view, the death-rate per 100,000 population, is 191.3 for diseases of the circulatory system, heart disease, etc., 163.6 for pneumonia and other diseases of the respiratory system, and 147.8 for meningitis and other diseases of the nervous system.

The proportions are next highest for diseases of the digestive system (diarrhea and enteritis, etc.), violence other than suicide or public calamity, cancer, Bright's disease, and early infancy.

The most fatal epidemic disease was typhoid fever, causing 425 deaths, or 1.6 per cent of the State total. Next were diphtheria and croup, influenza, whooping-cough, measles, malarial fever, scarlet fever, and smallpox.

There are 709 deaths known to have resulted directly or indirectly from earthquake and fire, distributed as follows: San Francisco, 463; Santa Clara, 141; Sonoma, 72; Alameda, 12, and other counties, 21. The deaths in Santa Clara county were mainly at Agnews State Hospital, and in Sonoma county mainly in Santa Rosa city. Most of the deaths in Alameda and other counties occurred among refugees from San Francisco suffering from fright or exposure.

Analysis of causes of death in different localities reveals marked contrasts between the several geographic divisions in the relative prevalence of various diseases.

In the coast counties of both Northern and Central California, as well as in the six counties of Southern California other than Los Angeles, relatively high proportions of all deaths are due to diseases of the nervous system, the explanation being the presence of State hospitals in these three geographic divisions.

The interior counties of both Northern and Central California have high proportions of total deaths due to malarial fever, typhoid fever, and other epidemic diseases. The present low death-rates for these geographic divisions could be further reduced by stricter enforcement of the health laws.

In San Francisco, and to a less extent in the other bay counties, the proportion is very high for diseases of the circulatory system, heart disease and kindred complaints.

In Los Angeles, as well as the other counties of Southern California, the proportions are very high for tuberculosis, on account of the many deaths occurring among newcomers from the East.

Tuberculosis caused 4,183 deaths, or 15.5 per cent of the State total. The per cent ranges from 22.2 for Los Angeles, and 20.8 for the other counties south of Tehachapi, to 11.9 for the bay counties other than San Francisco, and only 10.6 for the interior counties of Northern California.

However, deaths from tuberculosis in Southern California occur largely among newly arrived consumptives. Thus, 27.8 per cent of the tuberculosis victims in Southern California had lived in the State less than a year, and altogether 58.2 per cent had lived here less than ten years, the corresponding per cents for the entire State being 13.3 and 33.2, and for Northern and Central California together being 4.6 and

18.2 respectively. In fact, of all who died of tuberculosis in Southern California, 3.5 per cent had been in the State less than a month, altogether 10.8 per cent less than three months, and altogether 18.4 per cent less than six months.

In Northern and Central California, on the other hand, considerable numbers of native Californians and old-time residents fall victims to the "great white plague." The per cent of native Californians among tuberculosis victims is 37.3 for Northern California, and 36.9 for Central California, as compared with only 14.1 for Southern California, and 28.4 for the State as a whole. Similarly, the per cent who had lived here at least ten years is 33.7 for both Northern and Central California, against 19.5 for Southern California, and 28.4 for the entire State.

Geographic Divisions.—For convenience in tabulation the fifty-seven counties of California have been grouped in three main and eight minor geographic divisions. The three main divisions are Northern, Central, and Southern California. The line between Northern and Central California has been drawn at the southern boundary of Placer, Sutter, Colusa, Napa, and Sonoma counties, or the northern boundary of El Dorado, Sacramento, Yolo, and Marin counties. This dividing line extends irregularly from Lake Tahoe to the Pacific Ocean somewhat north of San Francisco Bay. The line between Central and Southern California has been drawn at the southern boundary of Inyo, Kern, and San Luis Obispo counties, or the northern boundary of San Bernardino, Los Angeles, Ventura, and Santa Barbara counties. This line is familiarly located by Tehachapi pass.

In both Northern and Central California, divisions have been made between the coast and the interior counties. In each case the coast counties include some counties not actually contiguous to the Pacific Ocean but yet on the westward side of the Coast Ranges. Moreover, in Central California, San Francisco, and the other bay counties (Alameda, Contra Costa, Marin, and San Mateo) have been made minor geographic divisions. Similarly, in Southern California, Los Angeles has been made a minor geographic division in contrast with the other six counties south of Tehachapi. The counties included in each geographic division have been shown before in the Monthly Bulletin (Vol. 1, No. 8, p. 55, January, 1906).

Death-rates.—Under the law of 1905 requiring the proper registration of deaths prior to the issuance of burial permits, returns of varying completeness were received in the fiscal year 1905-1906 from all the fifty-seven counties in the State. In order to calculate death-rates the population of California in 1905 has been estimated conservatively according to the Census Bureau method by adding to the population in 1900 five tenths of the increase between 1890 and 1900, except that for the few counties showing decreases between the last two Federal censuses the population in 1900 has been taken for 1905, and for the three principal cities arbitrary estimates have been made because of their exceptionally rapid growth. The estimate for San Francisco in 1905 is 450,000, for Los Angeles 180,000, and for Oakland 90,000.

The following table shows the population as thus estimated in 1905, the deaths, exclusive of stillbirths, reported for 1905-1906, and the

death-rate per 1,000 population, for each geographic division indicated above as well as for certain combinations of these divisions:

TABLE 1.—*Estimated Population (1905), Deaths, and Death-rate per 1,000 Population, for Geographic Divisions: 1905–1906.*

Geographic Division.	Estimated Population: 1905.	Deaths: 1905–1906.	Death-rate per 1,000 Population.
THE STATE	1,784,521	27,026	15.1
<i>Northern California</i>			
Coast counties	269,510	3,093	11.5
Interior counties	121,785	1,457	12.0
	147,725	1,636	11.1
<i>Central California</i>	1,105,090	16,720	15.1
San Francisco	450,000	7,010	15.6
Other bay counties	216,127	3,133	14.5
Coast counties	132,371	2,176	16.4
Interior counties	306,592	4,401	14.4
<i>Southern California</i>	409,921	7,213	17.6
Los Angeles	259,000	4,638	17.9
Other counties	150,921	2,575	17.1
<i>Northern and Central California</i>	1,374,600	19,813	14.4
Coast counties	920,283	13,776	15.0
Interior counties	454,317	6,037	13.3
Metropolitan area	666,127	10,143	15.2
Rural counties	708,473	9,670	13.6

It appears from Table 1 that for an estimated State population of 1,784,521 in 1905, the 27,026 deaths in 1905–1906 give a rate of 15.1 per 1,000 population.

Of the main geographic divisions, Northern California shows the lowest death-rate, 11.5, and Southern California the highest, 17.6, the rate for Central California being the same as for the State, 15.1.

Of the minor divisions, both the coast and interior counties of Northern California have death-rates, 12.0 and 11.1 respectively, which are considerably below the State average. In explanation of these low death-rates, however, it should be noted that the returns were not particularly complete for several counties in Northern California.

The death-rate is highest, 17.9, for Los Angeles and next, 17.1, for the other six counties of Southern California. The relatively high death-rates in this part of the State are due largely to the many deaths of recent residents, especially from tuberculosis.

The death-rate is also above the State average for the coast counties of Central California, 16.4, as well as for San Francisco, 15.6. In each of these geographic divisions, however, the death-rate was increased materially by the excessive mortality in April, 1906, resulting from a seismic disturbance.

The rate is below the State average, 15.1, not only for the coast and interior counties of Northern California, but also for the bay counties other than San Francisco (Alameda, Contra Costa, Marin and San Mateo), as well as for the interior counties of Central California, extending from Yolo, Sacramento and El Dorado on the north, to and including Kern on the south. The death-rate is 14.5 for the bay counties

other than San Francisco and 14.4 for the group of interior counties just described.

For Northern and Central California together the death-rate is only 14.4, as compared with 17.9 for Southern California. The rate for the coast counties from Del Norte to San Luis Obispo inclusive is 15.0, against 13.3 for the interior counties from Siskiyou and Modoc to and including Kern. That the death-rate is higher for the coast than for the interior counties is due mainly to the relatively great mortality usual in a metropolis like San Francisco. Thus, the death-rate is 15.2 for the metropolitan area, comprising San Francisco and the other bay counties, against only 13.6 for the rural counties of Northern and Central California.

Causes of Death.—The following table gives the number of deaths in California in 1905–1906 from certain principal causes, as well as the proportion from each cause per 1,000 total deaths and also the death-rate per 100,000 estimated population (1,784,521):

TABLE 2.—*Deaths from Certain Principal Causes, with Proportion per 1,000 Total Deaths and Death-rate per 100,000 Population, for California: 1905–1906.*

Cause of Death.	Deaths: 1905–1906.	Proportion per 1,000 Total Deaths.	Death- rate per 100,000 Pop- ulation.
ALL CAUSES	27,026	1,000.0	1,514.5
Typhoid fever	425	15.7	23.8
Malarial fever	90	3.3	5.0
Smallpox	27	1.0	1.5
Measles	128	4.7	7.2
Scarlet fever	45	1.7	2.5
Whooping-cough	174	6.4	9.8
Diphtheria and croup	234	8.7	13.1
Influenza	217	8.0	12.2
Other epidemic diseases	193	7.2	10.8
Tuberculosis of lungs	3,622	134.0	203.0
Tuberculosis of other organs	561	20.8	31.4
Cancer	1,428	52.8	80.0
Other general diseases	1,020	37.7	57.2
Meningitis	448	16.6	25.1
Other diseases of nervous system	2,190	81.0	122.7
Diseases of circulatory system	3,413	126.3	191.3
Pneumonia and broncho-pneumonia	2,153	79.7	120.6
Other diseases of respiratory system	767	28.4	43.0
Diarrhea and enteritis, under 2 years	700	25.9	39.2
Diarrhea and enteritis, 2 years and over	278	10.3	15.6
Other diseases of digestive system	1,427	52.8	80.0
Bright's disease and nephritis	1,407	52.1	78.8
Childbirth	262	9.7	14.7
Early infancy	851	31.5	47.7
Suicide	474	17.5	26.6
Earthquake and fire	709	26.2	39.7
Other violence	1,955	72.3	109.6
All other causes	1,828	67.7	102.4

Tuberculosis is the principal cause of death in California. Over one seventh (15.5 per cent) of all deaths were due to this disease, 13.4 per cent of all deaths being caused by tuberculosis of the lungs and 2.1 per cent by tuberculosis of other organs. The death-rate is 234.4 per 100,000 population for all forms of tuberculosis.

Next to tuberculosis come diseases of the circulatory system, heart disease, etc. These diseases caused one eighth (12.6 per cent) of all deaths and have a death-rate of 191.3 per 100,000 population.

Next come diseases of the respiratory system, which caused nearly one ninth (10.8 per cent) of all deaths in the State, pneumonia and broncho-pneumonia causing 8.0 per cent and other diseases of the respiratory system 2.8 per cent of all deaths. The death-rate for all diseases of the respiratory system is 163.6 per 100,000 population.

Following pneumonia and other diseases of the respiratory system come meningitis and other diseases of the nervous system. These diseases caused nearly one tenth (9.8 per cent) of all deaths and have a death-rate of 147.8 per 100,000 population.

The proportions are next highest for diseases of the digestive system (diarrhea and enteritis, etc.), 8.9 per cent; violence other than suicide or earthquake and fire, 7.2 per cent; cancer, 5.3 per cent; Bright's disease and nephritis, 5.2 per cent; and early infancy, 3.2 per cent.

Of the epidemic diseases, typhoid fever was by far the most fatal, causing 425 deaths, or 1.6 per cent of the State total for the year. The number of deaths from other important epidemic diseases in 1905-1906 was as follows: diphtheria and croup, 234; influenza, 217; whooping-cough, 174; measles, 128; malarial fever, 90; scarlet fever, 45; and smallpox, 27. The deaths from smallpox were only 1 in each 1,000 from all causes and represent a death-rate of no more than 1.5 per 100,000 population.

Altogether, 709 deaths, or 2.6 per cent of all for the year 1905-1906, are charged against the earthquake and fire of April, 1906. The number given includes only the deaths known to have resulted from this public calamity, and may perhaps underestimate the loss of life resulting from this seismic disturbance. However, the total does include several deaths resulting only indirectly from earthquake and fire, as deaths of aged persons from fright or heart disease and deaths of infants from exposure.

The 709 deaths resulting directly or indirectly from earthquake and fire occurred in the following counties: San Francisco, 463; Santa Clara, 141; Sonoma, 72; Alameda, 12; Santa Cruz, 6; San Benito and Sacramento, 3 each; Mendocino, Napa, and Solano, 2 each; and Glenn, Nevada, and Los Angeles, 1 each. The bulk of the deaths in Santa Clara county were at the State Hospital at Agnews, and nearly all in Sonoma county were in Santa Rosa city. Most of the deaths in the other counties named occurred among refugees from San Francisco suffering from fright or exposure.

Table 3 gives for the three main geographic divisions the number of deaths from certain principal causes, and also the proportion from each cause per 1,000 total deaths. The death-rates for each disease per 100,000 population are not shown for geographic divisions, because the registration of deaths was not equally complete throughout the State.

TABLE 3.—Deaths from Certain Principal Causes, with Proportion per 1,000 Total Deaths,
for Main Geographic Divisions: 1905-1906.

Cause of Death.	The State.	Division.		
		Northern.	Central.	Southern.
DEATHS: 1905-1906.				
ALL CAUSES	27,026	3,093	16,720	7,213
Typhoid fever	425	55	278	92
Malarial fever	90	39	41	10
Smallpox	27	4	22	1
Measles	128	7	69	52
Scarlet fever	45	5	29	11
Whooping-cough	174	34	87	53
Diphtheria and croup	234	31	132	71
Influenza	217	50	102	65
Other epidemic diseases	193	40	107	46
Tuberculosis of lungs	3,622	309	1,893	1,420
Tuberculosis of other organs	561	56	358	147
Cancer	1,428	136	903	389
Other general diseases	1,020	121	638	261
Meningitis	448	46	284	118
Other diseases of nervous system	2,190	347	1,265	578
Diseases of circulatory system	3,413	344	2,282	787
Pneumonia and broncho-pneumonia	2,153	250	1,405	498
Other diseases of respiratory system	767	92	479	196
Diarrhea and enteritis, under 2 years	700	47	487	166
Diarrhea and enteritis, 2 years and over	278	24	185	69
Other diseases of digestive system	1,427	173	897	357
Bright's disease and nephritis	1,407	115	864	428
Childbirth	262	27	166	69
Early infancy	851	62	553	236
Suicide	474	49	317	108
Earthquake and fire	709	78	630	1
Other violence	1,955	255	1,140	560
All other causes	1,828	297	1,107	424
PROPORTION PER 1,000 TOTAL DEATHS.				
ALL CAUSES	1,000.0	1,000.0	1,000.0	1,000.0
Typhoid fever	15.7	17.8	16.6	12.8
Malarial fever	3.3	12.6	2.5	1.4
Smallpox	1.0	1.3	1.3	0.1
Measles	4.7	2.3	4.1	7.2
Scarlet fever	1.7	1.6	1.7	1.5
Whooping-cough	6.4	11.0	5.2	7.4
Diphtheria and croup	8.7	10.0	7.9	9.8
Influenza	8.0	16.2	6.1	9.0
Other epidemic diseases	7.2	12.9	6.4	6.4
Tuberculosis of lungs	134.0	99.9	113.2	196.9
Tuberculosis of other organs	20.8	18.1	21.4	20.4
Cancer	52.8	44.0	54.0	53.9
Other general diseases	37.7	39.1	38.2	36.2
Meningitis	16.6	14.9	17.0	16.4
Other diseases of nervous system	81.0	112.2	75.7	80.1
Diseases of circulatory system	126.3	111.2	136.5	109.1
Pneumonia and broncho-pneumonia	79.7	80.8	84.0	69.0
Other diseases of respiratory system	28.4	29.8	28.6	27.2
Diarrhea and enteritis, under 2 years	25.9	15.2	29.1	23.0
Diarrhea and enteritis, 2 years and over	10.3	7.8	11.1	9.6
Other diseases of digestive system	52.8	55.9	53.6	49.5
Bright's disease and nephritis	52.1	37.2	51.7	59.3
Childbirth	9.7	8.7	9.9	9.6
Early infancy	31.5	20.1	33.1	32.7
Suicide	17.5	15.8	19.0	15.0
Earthquake and fire	26.2	25.2	37.7	0.1
Other violence	72.3	82.4	68.2	77.6
All other causes	67.7	96.0	66.2	58.8

Table 3 shows that the various epidemic diseases cause rather large proportions of all deaths in Northern California, the proportion for this division being higher than the State average in the case of every epidemic disease except measles and scarlet fever. In Northern California, also, the proportion is high for diseases of the nervous system other than meningitis, being 112.2 here against a general average of only 81.0. Central California excels particularly in the proportion of all deaths caused by diseases of the circulatory system (heart disease, etc.), the proportion for such diseases per 1,000 total deaths being 136.5 for this division, against only 126.3 for the State. Southern California leads especially in the proportion of all deaths due to tuberculosis, the proportion for tuberculosis of the lungs being 196.9 per 1,000 total deaths for the seven counties south of Tehachapi, as compared with only 134.0 for the State as a whole. In Southern California, too, the proportion is high for measles, being 7.2 here against a State average of 4.7 per 1,000 total deaths.

Table 4 presents similar figures for the eight minor geographic divisions.

TABLE 4.—*Deaths from Certain Principal Causes, with Proportion per 1,000 Total Deaths, for Minor Geographic Divisions: 1905-1906.*

Cause of Death.	The State	Northern California.		Central California.				Southern California.	
		Coast Counties.	Interior Counties.	San Francisco	Other Bay Counties.	Coast Counties.	Interior Counties.	Los Angeles.	Other Counties.
DEATHS: 1905-1906.									
ALL CAUSES	27,026	1,457	1,636	7,010	3,133	2,176	4,401	4,638	2,575
Typhoid fever	425	19	36	83	37	33	125	59	33
Malarial fever	90	4	35	6	2	3	30	5	5
Smallpox	27	1	3	11	5	—	6	1	—
Measles	128	5	2	38	15	4	12	39	13
Scarlet fever	45	2	3	10	7	2	10	9	2
Whooping-cough	174	14	20	30	24	19	14	34	19
Diphtheria and croup	234	12	19	49	29	18	36	48	23
Influenza	217	19	31	27	17	25	33	32	33
Other epidemic diseases	193	18	22	45	16	13	33	30	16
Tuberculosis of lungs	3,622	156	153	792	303	262	536	934	486
Tuberculosis of other organs	561	35	21	147	69	50	92	97	50
Cancer	1,428	69	67	380	189	118	216	278	111
Other general diseases	1,020	45	76	275	109	67	187	183	78
Meningitis	448	22	24	110	67	26	81	68	50
Other diseases of nervous system	2,190	220	127	414	245	221	385	319	259
Diseases of circulatory system	3,413	152	192	1,052	448	271	511	542	245
Pneumonia and bronchopneumonia	2,153	107	143	649	281	131	344	343	155
Other diseases of respiratory system	767	42	50	213	102	61	103	136	60
Diarrhea and enteritis, under 2 years	700	21	26	215	103	57	112	99	67
Diarrhea and enteritis, 2 years and over	278	14	10	52	36	33	64	45	24
Other diseases of digestive system	1,427	72	101	379	175	99	244	256	101
Bright's disease and nephritis	1,407	53	62	388	201	110	165	281	147
Childbirth	262	9	18	50	34	34	48	44	25
Early infancy	851	22	40	244	120	43	146	175	61
Suicide	474	26	23	160	59	39	59	76	32
Earthquake and fire	709	76	2	463	12	150	5	1	—
Other violence	1,955	94	161	372	217	136	415	284	276
All other causes	1,828	128	169	356	211	151	389	220	204

TABLE 4.—Deaths from Certain Principal Causes, with Proportion per 1,000 Total Deaths, for Minor Geographic Divisions: 1905-1906—Continued.

Cause of Death.	The State	Northern California.		Central California.			Southern California.		Other Counties
		Coast Counties	Interior Counties	San Francisco	Other Bay Counties	Coast Counties	Interior Counties	Los Angeles..	
PROPORTION PER 1,000 TOTAL DEATHS.									
ALL CAUSES	1,000.0	1,000.0	1,000.0	1,000.0	1,000.0	1,000.0	1,000.0	1,000.0	1,000.0
Typhoid fever	15.7	13.0	22.0	11.8	11.8	15.2	28.4	12.7	12.8
Malarial fever	3.3	2.8	21.4	0.9	0.6	1.4	6.8	1.1	2.0
Smallpox	1.0	0.7	1.8	1.6	1.6	-----	1.4	0.2	-----
Measles	4.7	3.4	1.2	5.4	4.8	1.8	2.7	8.4	5.1
Scarlet fever	1.7	1.4	1.8	1.4	2.2	0.9	2.3	1.9	0.8
Whooping-cough	6.4	9.6	12.2	4.3	7.7	8.7	3.2	7.3	7.4
Diphtheria and croup	8.7	8.2	11.6	7.0	9.3	8.3	8.2	10.4	8.9
Influenza	8.0	13.0	19.0	3.8	5.4	11.5	7.5	6.9	12.8
Other epidemic diseases	7.2	12.4	13.4	6.4	5.1	6.0	7.5	6.5	6.2
Tuberculosis of lungs	134.0	107.1	93.5	113.0	96.7	120.4	121.8	201.4	188.7
Tuberculosis of other organs	20.8	24.0	12.8	21.0	22.0	23.0	20.9	20.9	19.4
Cancer	52.8	47.4	41.0	54.2	60.3	54.2	49.1	59.9	43.1
Other general diseases	37.7	30.9	46.5	39.2	34.8	30.8	42.5	39.5	30.3
Meningitis	16.6	15.1	14.7	15.7	21.4	11.9	18.4	14.7	19.4
Other diseases of nervous system	81.0	151.0	77.6	59.1	78.2	101.6	87.5	68.8	100.6
Diseases of circulatory system	126.3	104.3	117.4	150.1	143.0	124.5	116.1	116.9	95.2
Pneumonia and broncho-pneumonia	79.7	73.4	87.4	92.6	89.7	60.2	78.2	74.0	60.2
Other diseases of respiratory system	28.4	28.8	30.6	30.4	32.6	28.0	23.4	29.3	23.3
Diarrhea and enteritis, under 2 years	25.9	14.4	15.9	30.7	32.9	26.2	25.5	21.3	26.0
Diarrhea and enteritis, 2 years and over	10.3	9.6	6.1	7.4	11.5	15.2	14.6	9.7	9.3
Other diseases of digestive system	52.8	49.4	61.7	54.1	55.9	45.5	55.4	55.2	39.2
Bright's disease and nephritis	52.1	36.4	37.9	55.3	64.2	50.6	37.5	60.6	57.1
Childbirth	9.7	6.2	11.0	7.1	10.8	15.6	10.9	9.5	9.7
Early infancy	31.5	15.1	24.5	34.8	38.3	19.8	33.2	37.7	23.7
Suicide	17.5	17.8	14.1	22.8	18.8	17.9	13.2	16.4	12.4
Earthquake and fire	26.2	52.2	1.2	66.0	3.8	68.9	1.1	0.2	-----
Other violence	72.3	64.5	98.4	53.1	69.3	62.5	94.3	61.2	107.2
All other causes	67.7	87.9	103.3	50.8	67.3	69.4	88.4	47.4	79.2

It appears from Table 4 that the coast counties of Northern California have a very high proportion of deaths due to diseases of the nervous system other than meningitis. This is accounted for by the fact that many of the deaths reported for this geographic division occurred at the Mendocino and Napa State Hospitals.

The interior counties of Northern California have high proportions for various epidemic diseases. Thus, the proportion for this division as compared with the average for the State is 21.4 against 3.3 for malarial fever, 19.0 against 8.0 for influenza, 12.2 against 6.4 for whooping-cough, 22.0 against 15.7 for typhoid fever, and 11.6 against 8.7 for diphtheria and croup.

In San Francisco the proportion is particularly high for diseases of the circulatory system, being 150.1 here against 126.3 for the State. The proportions for San Francisco are also considerably above the State averages for pneumonia and broncho-pneumonia, 92.6 against 79.7; for diarrhea and enteritis among children under 2 years of age, 30.7 against 25.9; and for suicide, 22.8 for the metropolis, against 17.5 for the State.

In the other bay counties, as in the metropolis itself, the proportion of all deaths caused by diseases of the circulatory system is very high,

being 143.0 for this group of suburban counties, against only 126.3 for the State as a whole.

The coast counties of Central California, like the coast counties of Northern California, have a high proportion for diseases of the nervous system other than meningitis (101.6 against 81.0), and the explanation is that the returns for this division include numerous deaths at the Agnews State Hospital.

The interior counties of Central California, like the interior counties of Northern California, have high proportions for certain epidemic diseases. The proportion of all deaths caused by malarial fever is 6.8 for this division, against 3.3 for the State, and the proportion due to typhoid fever is 28.4 for the division, against 15.7 for the State.

Los Angeles has a very high proportion of deaths due to tuberculosis of the lungs. The proportion for Los Angeles is no less than 201.4, as compared with only 134.0 for the State. Los Angeles also has a high proportion for measles and for diphtheria and croup, the proportions being 8.4 and 10.4 for the county, against 4.7 and 8.7, respectively, for the entire State.

The other six counties south of Tehachapi likewise have a high proportion for tuberculosis of the lungs, 188.7 against 134.0, as well as for diseases of the nervous system other than meningitis, 100.6 against 81.0. As for the coast counties of Northern and Central California, so for the counties of Southern California, the high proportion for nervous diseases is explained by the inclusion of deaths at State hospitals. The very high proportions of all deaths caused by tuberculosis both in Los Angeles and the other counties south of Tehachapi are accounted for by the great number of newcomers from Eastern states who succumb to the "great white plague" even after they reach the Land of Sunshine.

Tuberculosis.—Table 5 brings out sharply the contrasts between different parts of the State in the mortality from tuberculosis.

TABLE 5.—*Number and Per Cent of Total Deaths from Tuberculosis and All Other Causes, for Geographic Divisions: 1905–1906.*

Geographic Division.	Total Deaths: 1905–1906.	Tuberculosis.		All Other Causes.	
		Number.	Per Cent	Number.	Per Cent.
THE STATE	27,026	4,183	15.5	22,843	84.5
<i>Northern California</i>	3,093	365	11.8	2,728	88.2
Coast counties	1,457	191	13.1	1,266	86.9
Interior counties	1,636	174	10.6	1,462	89.4
<i>Central California</i>	16,720	2,251	13.5	14,469	86.5
San Francisco	7,010	939	13.4	6,071	86.6
Other bay counties	3,133	372	11.9	2,761	88.1
Coast counties	2,176	312	14.3	1,864	85.7
Interior counties	4,401	628	14.3	3,773	85.7
<i>Southern California</i>	7,213	1,567	21.7	5,646	78.3
Los Angeles	4,638	1,031	22.2	3,607	77.8
Other counties	2,575	536	20.8	2,039	79.2
<i>Northern and Central California</i>	19,813	2,616	13.2	17,197	86.8
Coast counties	13,776	1,814	13.2	11,962	86.8
Interior counties	6,037	802	13.3	5,235	86.7
Metropolitan area	10,143	1,311	12.9	8,832	87.1
Rural counties	9,670	1,305	13.5	8,365	86.5

It appears from this table that the 4,183 deaths from tuberculosis in California are 15.5 per cent, or over one seventh, of the total 27,026, reported in 1905-1906. The per cent of total deaths caused by tuberculosis is no less than 22.2 for Los Angeles and 20.8 for the other six counties south of Tehachapi. The per cent is below the State average, 15.5, for every geographic division north of Tehachapi. It is as low as 11.9 for the bay counties other than San Francisco, and only 10.6 for the interior counties of Northern California.

However, it must be remembered that deaths of newly arrived consumptives are much more numerous in Southern California than in the rest of the State. This appears clearly from Table 6, showing the length of residence in California of those who died of tuberculosis in 1905-1906.

TABLE 6.—*Deaths from Tuberculosis classified by Length of Residence in California, with Per Cent Distribution, for Geographic Divisions: 1905-1906.*

Geographic Division.	Total.	Length of Residence.				
		Under 1 Year.	1 to 9 Years.	10 Years and Over.	Life.	Unknown.
NUMBERS.						
THE STATE	4,183	557	831	1,188	1,187	420
<i>Northern California</i>	365	15	40	123	136	51
Coast counties	191	6	20	62	72	31
Interior counties	174	9	20	61	64	20
<i>Central California</i>	2,251	106	315	759	830	241
San Francisco	939	31	108	336	342	122
Other bay counties	372	15	53	135	142	27
Coast counties	312	22	51	73	150	16
Interior counties	628	38	103	215	196	76
<i>Southern California</i>	1,567	436	476	306	221	128
Los Angeles	1,031	278	342	195	125	91
Other counties	536	158	134	111	96	37
<i>Northern and Central California</i>	2,616	121	355	882	966	292
Coast counties	1,814	74	232	606	706	196
Interior counties	802	47	123	276	260	96
Metropolitan area	1,311	46	161	471	484	149
Rural counties	1,305	75	194	411	482	143
PER CENTS.						
THE STATE	100.0	13.3	19.9	28.4	28.4	10.0
<i>Northern California</i>	100.0	4.1	10.9	33.7	37.3	14.0
Coast counties	100.0	3.1	10.5	32.5	37.7	16.2
Interior counties	100.0	5.2	11.5	35.0	36.8	11.5
<i>Central California</i>	100.0	4.7	14.0	33.7	36.9	10.7
San Francisco	100.0	3.3	11.5	35.8	36.4	13.0
Other bay counties	100.0	4.0	14.2	36.3	38.2	7.3
Coast counties	100.0	7.1	16.3	23.4	48.1	5.1
Interior counties	100.0	6.1	16.4	34.2	31.2	12.1
<i>Southern California</i>	100.0	27.8	30.4	19.5	14.1	8.2
Los Angeles	100.0	27.0	33.2	18.9	12.1	8.8
Other counties	100.0	29.5	25.0	20.7	17.9	6.9
<i>Northern and Central California</i>	100.0	4.6	13.6	33.7	36.9	11.2
Coast counties	100.0	4.1	12.8	33.4	38.9	10.8
Interior counties	100.0	5.9	15.3	34.4	32.4	12.0
Metropolitan area	100.0	3.5	12.3	35.9	36.9	11.4
Rural counties	100.0	5.7	14.9	31.5	36.9	11.0

Table 6 shows that 27.8 per cent of those who died of tuberculosis in Southern California had lived in the State less than a year, the per cent being 27.0 for Los Angeles and even 29.5 for the other six counties. The corresponding figure for Northern and Central California together is only 4.6, and that for the entire State is 13.3 per cent.

In fact, many of the tuberculosis victims in Southern California had been in the State only a few months. This is shown clearly by the following tabular statement, giving the length of residence in months of those who died of tuberculosis in Los Angeles and the other counties of Southern California after having been in the State less than a year:

Geographic Division.	Total Under 1 Year.	Length of Residence.			
		Under 1 Month.	1 to 2 Months.	3 to 5 Months.	6 to 11 Months.
NUMBERS.					
<i>Southern California</i> -----	436	55	114	120	147
Los Angeles -----	278	36	66	82	94
Other counties -----	158	19	48	38	53
PER CENTS.					
<i>Southern California</i> -----	27.8	3.5	7.3	7.6	9.4
Los Angeles -----	27.0	3.5	6.4	8.0	9.1
Other counties -----	29.5	3.5	9.0	7.1	9.9

It appears from the preceding tabular statement that of all who died of tuberculosis in Southern California 3.5 per cent had been in the State less than a month, altogether 10.8 per cent less than three months, and altogether 18.4 per cent less than six months. In Los Angeles 17.9 per cent, and in the other counties 19.6 per cent, of the total victims of tuberculosis had lived in California less than half a year.

Referring again to Table 6, one finds that while in Southern California altogether 58.2 per cent of all tuberculosis victims had lived in the State less than 10 years, in Northern and Central California together only 18.2 per cent had lived here this length of time, the per cent for the whole State being 33.2.

Native Californians form a considerable proportion of all who succumb to tuberculosis in Northern and Central California. Thus, the per cent of native Californians among all who died of tuberculosis is 37.3 for Northern California, and 36.9 for Central California, as compared with 28.4 for the entire State, and only 14.1 for Southern California.

Similarly, deaths of old-time residents from tuberculosis are relatively more numerous north than south of Tehachapi. The per cent of tuberculosis victims who had lived here at least ten years is 33.7 for both Northern and Central California, against 19.5 for Southern California and an average of 28.4 for the whole State.

(Concluded in Monthly Bulletin for October.)

VITAL STATISTICS FOR SEPTEMBER.

Summary.—For September there were reported 1,741 living births; 1,906 deaths, exclusive of stillbirths; and 1,444 marriages, the marriage returns being incomplete. For an estimated State population of 1,882,483 in 1906 the returns for September give the following annual rates: Births, 11.1; deaths, 12.1; and marriages, 9.2, per 1,000 population.

As usual, tuberculosis was the leading cause of death, and typhoid fever was the most fatal epidemic disease.

Causes of Death.—The following table gives the number of deaths due to certain principal causes in September, as well as the proportion from each cause per 1,000 total deaths for both September and August:

Cause of Death.	Deaths: September.	Proportion per 1,000.	
		September.	August.
ALL CAUSES	1,906	1,000.0	1,000.0
Typhoid fever	56	29.4	34.2
Malarial fever	17	8.9	4.7
Smallpox			
Measles	3	1.6	1.4
Scarlet fever			
Whooping-cough	6	3.2	5.2
Diphtheria and croup	12	6.3	3.8
Influenza	1	0.5	0.5
Other epidemic diseases	14	7.3	5.2
Tuberculosis of lungs	207	108.6	132.5
Tuberculosis of other organs	43	22.6	15.2
Cancer	110	57.7	54.1
Other general diseases	69	36.2	35.1
Meningitis	30	15.8	10.0
Other diseases of nervous system	189	99.2	82.2
Diseases of circulatory system	229	120.1	134.4
Pneumonia and broncho-pneumonia	106	55.6	49.4
Other diseases of respiratory system	50	26.2	16.1
Diarrhea and enteritis, under 2 years	102	53.5	47.5
Diarrhea and enteritis, 2 years and over	25	13.1	19.0
Other diseases of digestive system	85	44.6	53.2
Bright's disease and nephritis	115	60.3	52.2
Childbirth	15	7.9	10.0
Early infancy	57	29.9	36.1
Suicide	37	19.4	22.3
Other violence	175	91.8	102.1
All other causes	153	80.3	73.6

Tuberculosis, as usual, was the leading cause of death in September, but diseases of the circulatory system (heart disease, etc.) were a close second. Altogether 250 deaths, or 13.1 per cent of all, were caused by tuberculosis of the lungs and other organs, while 229, or 12.0 per cent, were due to various diseases of the circulatory system.

Of the epidemic diseases, typhoid fever caused 56 deaths in the month, malarial fever 17, diphtheria and croup 12, whooping-cough 6, and measles 3.

DUTIES OF PARENTS TO CHILDREN.

In each of the last two numbers of the Bulletin we have had occasion to speak of the school system of California in relation to the health and wellbeing of the children. It was done in the firm conviction that our children are suffering from its evil effects and that the coming generation will pay the penalty in men and women, many of whom are shattered in constitution and most of whom are poorly educated when viewed from the standpoint of productive usefulness. It is an age of restlessness and ambition, and we are living and acting on too high a tension. Men and women are striving to accumulate wealth, social renown and political influence and are urging their children forward to

greater efforts in their studies. For nine months out of the twelve the children are kept in school under high pressure, with music, dancing and entertaining thrown in, to occupy the time during the non-school hours. In some instances the other three months are devoted to rest and recuperation, but too often in an effort to make up some deficient study, or even to enter a more advanced class. No school system, or want of system, is to blame for this. It is purely and simply the fault of the parents, and upon them must fall the blame of much, yes, very much, of the ill health, broken constitutions, and death among children. Ambitious for their children to be bright and shining stars in the social or business firmament, they force upon them a course that early transfers them to the celestial one, where they are at least supposed to be free from the eternal grind that has always been theirs.

Conditions like these are not pleasant to look at or consider, but they are real and not fancied. The "strenuous life" is upon us, and will stay for a long time yet. The older people will not readily give up their ambitions, but we can at least spare the young ones and let them have the simple life of childhood. Their forty weeks of schooling they must have, as long as such is the way, and they must take it according to rule, but their pathway can and must be relieved of all obstructions. Nothing should be placed in their way and no extra strain be put upon their nerves, and nothing strains them so much as irregular habits of life, especially in eating and hours of rest. This is completely under the control of the parents, and if they will only appreciate the danger and act accordingly, more will be done to give us healthy, robust children than in any other way.

Great care must be exercised in feeding the child, for upon the food depends the physical growth, and upon the physical the mental strength. Food should be plain and nutritious. Milk, eggs, meat, vegetables, and fruits in well-regulated quantities—which will depend in large measure upon the characteristics and temperament of the child—but never in too great excess. Cakes, pies, and sweetmeats while not excluded from the diet should be used with extreme caution; they are hard to digest and do not furnish nourishment in its best form. The parent should always remember that the child's appetite can not always be depended upon as a test of what is best. It may dictate that the child go to school without breakfast, a habit which will lead to evil results, and should under no circumstances be allowed. Always see that the child eats its breakfast, even if you have to pamper the appetite a little, not with cake or sweets, but with some nicely cooked dish which particularly appeals to that particular appetite. Eating between meals should not be encouraged, neither should a child with a delicate appetite be allowed to go hungry. A drink of pure milk, or a piece of bread and butter, will seldom hurt a child and may save much suffering.

Perhaps the greatest cause of breakdown for which the parent is responsible is the irregularity and want of proper sleep. The hours of darkness were intended for rest, and daylight for activity, and it is a mistake to let children reverse the order. The three hours before midnight are far better for rest than the three after 6 A. M. Habit through long years may make one enjoy his morning naps, but it is not nature's way, and in children especially, the loss of sleep in the first part of the night is to be deplored, and the more if the time has been spent in exciting amusements.

The child's mind should be kept as free and clear as possible. It is a delicate machine, and must not be overworked nor wrenched about with excitement. Long sessions on the piano stool, or frequent and late parties, will wreck the health of almost any child.

The daylight hours out of school should be spent as much as possible in the open air, in play and helpful employment, and the night, after 9 o'clock, in bed, which, by the way, should be in the open air as much as possible, never in a close, ill-ventilated room. If this be done the parents can rest assured that they have removed one of the great causes of breakdown in their children, and can with a clear conscience hold the school system responsible for its faults.

STATE HYGIENIC LABORATORY.

The State maintains, under the direction of the State Board of Health, a Hygienic Laboratory for the aid of health officers and physicians in their efforts to guard the public health. This laboratory is located at the State University at Berkeley and is under the immediate direction of Prof. A. R. Ward, to whom communications should be sent. The laboratory is equipped to make bacterial examinations for diphtheria, tuberculosis, typhoid and the less common bacterial diseases, and also water analyses. Containers for any of these will be furnished upon application and full directions given for properly securing the sample. Do not send in any other way than this. The samples of contagious disease products must be sent with the greatest care, and it is useless to send water in any other way than as directed. There are no charges for the laboratory service, and the only cost will be to mail or express the sample. Answer will be sent by mail, unless it is expressly requested that it be sent by telephone or telegraph, in which case the applicant will pay the charge for the message.

Where water is suspected of pollution, a careful examination should always be made to find the source of such pollution, and a full account of the results sent to the laboratory with the sample. It should be remembered that a bacterial examination of a water supply is not infallible. It can only tell what the condition is in that particular small quantity examined. There might be a temporary cessation of the pollution, or where the supply is large the mixture of pure and polluted may not be complete, and the sample taken from the pure.

In connection with this work the State Board of Health is trying to make arrangements to investigate all epidemics resulting from polluted waters, or other causes especially epidemic of typhoid fever. As this will involve considerable expense, it may not be possible in the near future, but local health officers can do much in this direction and furnish the State office valuable data.

Health officers should always report epidemics to the State Board of Health at Sacramento, and we will assist the local authorities to the limit of our power in discovering and removing the cause of the trouble.

CALIFORNIA PUBLIC HEALTH ASSOCIATION.

The semi-annual meeting of the California Public Health Association convened at Alum Rock Springs, San José, on October 12th.

The San José Chamber of Commerce and the Alum Rock Park Commissioners had planned for an excellent luncheon and a place of

meeting. President Simpson had completed the plans by arranging transportation for the delegates through the courtesy of the Alum Rock Railway Company.

The general subject for discussion was the use and abuse of mineral springs in California, two comprehensive and practical papers being read. Dr. Robert Crees of Paso Robles confined his paper largely to the uses and limitations of California's mineral springs in general therapeutics. Dr. Philip Mills Jones based a very forcible discussion of the "quackery" of mineral springs treatment of diseases upon selected extracts from the advertising folders of the many health resorts in California.

The discussions which followed the papers were most interesting and instructive. The prevailing opinion expressed fear that the great value of our mineral springs would be ruined if ignorant or unprincipled promoters were permitted indefinitely to exploit their real usefulness by the present unwarranted methods.

Many suggestive plans were advanced for the education of the public and the passage of prohibitive laws. The association passed resolutions recommending the establishment of a chemical laboratory under the control of the State Board of Health and the publication by the latter of tables of uniform analyses of the water from all the mineral springs of the State, together with a sanitary report of each spring and therapeutic and climatological comments.

It was also suggested that such reports should be forwarded to the proprietors of the springs in question, with permission to publish the letter in full, duly approved by the officers of the Public Health Association and indorsed by the State Medical Society.

The Public Health Association is composed of representatives from every organization interested in any phase of public or personal health. All persons interested are eligible to membership. The meetings are characterized by open and spirited discussions of all sides of each question by both medical and lay representatives. Under these conditions, it is believed that the resolution adopted will appeal to the public, as coming from an entirely disinterested organization after thorough discussion by business men, bankers, engineers and medical men.

Two subjects were proposed for discussion at the next meeting in Monterey in April, 1907:

1. "The Disposal of Sewage" was presented by Dr. Osborne of Santa Clara.

2. "Practicable Methods of Raising the Standard of Health of School Children" was proposed by Mrs. Helen Moore of San Francisco.

A committee composed of Dr. Osborne, Dr. Clarke, and Dr. Foster was appointed to prepare a programme.

Inasmuch as the association has no dues and no source of revenue, it was urged on each representative to personally explain the purposes of the organization to every friend interested in sanitation and good health to the end that the association's meetings may be more fully representative of all professions and all occupations.

The session closed with a formal vote of thanks to the Chamber of Commerce, to Dr. Simpson, and to others contributing by their generous activity toward the general success of the day.